MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for November, 1905, is based on data from about 3470 stations, classified as follows:

Weather Bureau stations, regular, telegraph, and mail, 176; West Indian Service, cable and mail, 13; River and Flood Service, regular 52, special river and rainfall, 363, special rainfall only, 98; cooperative observers, domestic and foreign, 2565; total Weather Bureau Service, 3267; Canadian Meteorological Service, by telegraph and mail, 33; Meteorological Service of the Azores, by cable, 2; Meteorological Office, London, by cable, 8; Mexican Telegraph Company, by cable, 3; Army Post Hospital reports, 18; United States Life-Saving Service, 9; Jamaica Weather Service, 130.

Since December, 1904, the Weather Bureau has received an average of about 1700 reports from as many observers and vessels, giving international simultaneous observations over the Atlantic and Pacific oceans at 12 noon, Greenwich time, or 7 a. m., seventy-fifth meridian time. These are charted, and, with the corresponding land observations, will form the framework for daily weather charts of the globe.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt. S.I. Kimball, General Superintendent of the United States Life-Saving Service; Capt. H. M. Hodges, U. S. N. (Retired), Hydrographer, United States Navy; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological Office, London; H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; Señor Enrique A. Del Monte, Director of the Meteorological Service of the Republic of Cuba; Rev. L. Gangoiti, Director of the Meteorological Observatory of Belen College, Havana, Cuba.

Attention is called to the fact that at regular Weather Bureau stations all data intended for the Central Office at Washington are recorded on seventy-fifth meridian or eastern standard time, except that hourly records of wind velocity and direction, temperature, and sunshine are entered on the respective local standards of time. As far as practicable, only the seventy-fifth meridian standard of time, which is exactly five hours behind Greenwich time, is used in the text of the REVIEW. The standards used by the public in the United States and Canada and by the cooperative observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is 157° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard meridian is that of San José, $5^h\ 36^m$ west of Greenwich.

Barometric pressures, whether "station pressures" or "sea-level pressures", are now reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

In conformity with Instructions No. 43, March 29, 1905, the designation "voluntary", as applied to the class of observers performing services under the direction of the Weather Bureau without a stated compensation in money, is discontinued, and the designation "cooperative", will be used instead in all official publications and correspondence.

Hereafter the titles of the respective forecast districts will be as used in the current REVIEW to accord with paragraph 236 of Station Regulations, dated June 15, 1905.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

The first important storm of the month over the eastern Atlantic crossed the British Isles during the 11th and 12th. From the 17th to 20th a storm advanced from the ocean west of Portugal northeastward over France. The third decade of November was stormy on the British coasts and the North Sea, and during the 26th a severe gale prevailed over the English Channel. In the region about the Azores the month was quiet, and the storms that reached the western Atlantic from the American Continent were of moderate intensity.

In the United States a larger proportion of the storms first appeared over the British Northwest Territory, and in several instances they were traced from British Columbia. The severer storms, however, advanced from the Middle West and Southwest over the Great Lakes, where their frequency and intensity made November, 1905, a notably disastrous month. The severer storms of this month attended the passage over the Great Lakes on the 24th of low area XVI–XVII and on the 28th of low area XX. Low areas XIII and XV caused heavy gales on the north Pacific coast on the 17th and 18th, and the rains that attended these depressions ended the dry season in California. Ample and timely advices and warnings regarding the gales were issued to Lake, Gulf, and seacoast ports.

The first important cold wave of the season swept from the British Northwest Territory to the Atlantic coast from the 26th to 30th, with snow in the Northwestern States, a minimum temperature of —24° at Havre, Mont., zero temperature as far south as central Nebraska, freezing weather in the interior of the Gulf States, and a fall in temperature of 20° to 40° in the Atlantic coast States north of Florida. Timely advices were issued in connection with this cold wave.

BOSTON FORECAST DISTRICT.

The chief storm of the month was that of the 28–29th, during which gales of great force prevailed along the southern coast, delaying and inconveniencing shipping generally. During this storm the schooner *Charles E. Sears* of Calais, Me., was wrecked off Chatham, Mass., on November 30. Warnings were issued and signals displayed well in advance of the storm. Storm warnings were also issued on the 1st, 6th, 13th, 15th, 17th, and 24th for storms of more or less violence that passed over or in the vicinity of this territory. A cold-